



FACT SHEET

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U.S. ARMY CHEMICAL MATERIALS AGENCY

VX

Military designation: VX

Description: The nerve agent VX is a man-made, fast-acting and lethal organophosphate compound similar to insecticide in terms of how it works and what kind of harm it can cause. VX, an odorless and tasteless oily liquid, was originally developed in the United Kingdom in the early 1950s. An amber liquid, the agent evaporates as slowly as motor oil. In vapor form VX is heavier than air and sinks quickly to the ground, particularly to low-lying areas. Although VX is the least volatile of all nerve agents, it remains the most potent. Death is extremely likely with as little as one drop of VX on human skin when the substance is not immediately removed and the area washed thoroughly.

Non-military uses: VX has no known commercial use.

Military uses: Chemists in the United Kingdom searching for new insecticides came across compounds that proved extremely toxic to humans. The British shared the discovery with the U.S. Army in 1953, and a systematic investigation of these compounds began at what is now Aberdeen Proving Ground—Edgewood Area, Md. The U.S. Army discovered that these new compounds were a great deal more persistent and toxic than the G-series nerve agents. In 1955, these compounds were designated V-series for “venomous.”

It is possible that Iraqi forces used VX or other nerve agents during the 1980-1988 Iran-Iraq War.

Health effects: Nerve agents are man-made, fast-acting, lethal, organophosphate compounds similar to insecticides. They affect the body by inhibiting or deactivating cholinesterase, an enzyme found throughout the body. When cholinesterase is inhibited, muscular and glandular hyperactivity occurs. Exposure to nerve agents can occur through inhalation, ingestion, eyes, skin and mucous membranes. They attack the nervous system causing glands to over-secrete, creating a buildup of fluid in the lungs and causing the muscles to convulse uncontrollably. Symptoms may appear immediately or within minutes or hours depending on the dose and route taken by the agent. Symptoms may include blurred vision and watery eyes, headache, runny nose, salivation, foaming at the mouth, tightness of chest, nausea, vomiting, extreme anxiety, difficulty in thinking and sleeping, muscle spasms, tremors, abdominal cramps, diarrhea and involuntary urination and defecation. Exposure to relatively large doses will result in loss of consciousness, convulsions, paralysis and respiratory failure resulting in death. Because VX evaporates slowly, VX contaminated surfaces are considered a long-term health threat.

Environmental fate: VX remains the least volatile of all nerve agents and slowest to evaporate from liquid into a vapor. Consequently, VX is persistent in the environment. Under average weather conditions, VX can last for days on objects with which it comes in contact and under cold conditions can last for months.

For more information,
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